

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-12. (Canceled)

13. (Currently Amended) A method for producing a polypeptide which binds to ~~having an activity of a receptor capable of binding to~~ a murine PBSF/SDF-1 and acts ~~acting~~ as a binding site for T-cell-line-tropic HIV-1 envelope protein (env) thereby promoting env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4, comprising:

culturing a transformant comprising an expression vector comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide binds ~~has an activity of a receptor capable of binding to~~ a murine PBSF/SDF-1 and acts ~~acting~~ as a binding site for T-cell-line-tropic HIV-1 ~~env cell membrane fusion with a T cell line tropic HIV-1 in the presence of human CD4;~~

~~(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T cell line tropic HIV-1 env cell membrane fusion with a T cell line tropic HIV-1 in the presence of human CD4;~~

(e) ~~(b)~~ a nucleotide sequence comprising SEQ ID NO: 1, ~~NO: 1 or a partial sequence thereof comprising at least SEQ ID NO: 3, SEQ ID NO: 5, or SEQ ID NO: 7,~~ wherein the nucleotide sequence encodes a polypeptide which binds ~~having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acts acting as a binding site for T-cell-line-tropic HIV-1 env-cell-membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;~~

~~(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the nucleotide sequence, wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env-cell-membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and~~

(e) ~~(c)~~ a nucleotide sequence ~~capable of hybridizing~~ that hybridizes under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the entire complementary nucleotide sequence of any one of (a) to ~~(d)~~ (b) above, and encoding a polypeptide which binds ~~having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acts acting as a binding site for T-cell-line-tropic HIV-1 env-cell-membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;~~ under conditions wherein the transformant is capable of expressing the expression vector.

14-15. (Canceled)

16. (Currently Amended) A recombinant cell expressing heterologous hCD4 and mCXCR-4, wherein said mCXCR-4 ~~a human CD4 protein and a polypeptide that~~ is encoded by a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide ~~has an activity of a receptor capable of binding~~ which binds to a murine PBSF/SDF-1 and ~~acting~~ acts as a binding site for T-cell-line-tropic HIV-1 envelope protein (env) thereby promoting env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

~~(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;~~

(e) ~~(b)~~ a nucleotide sequence comprising SEQ ID NO: 1, ~~NO: 1 or a partial sequence thereof comprising at least SEQ ID NO: 5~~, wherein the nucleotide sequence encodes a polypeptide ~~having an activity of a receptor capable of binding~~ which binds to a murine PBSF/SDF-1 and ~~acting~~ acts as a binding site for T-cell-line-tropic HIV-1 env thereby promoting cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

~~(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the nucleotide sequence,~~

~~wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and~~

(e) (c) a nucleotide sequence ~~capable of hybridizing~~ that hybridizes under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the entire complementary nucleotide sequence of any one of (a) to (d) ~~(b)~~ above, and encoding a polypeptide which binds ~~having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting~~ acts as a binding site for T-cell-line-tropic HIV-1 env thereby promoting cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

and wherein said recombinant cell is infected with T-cell-line-tropic HIV-1 when contacted therewith.

17-21. (Canceled)

22. (Currently Amended) A kit for detecting a T-cell-line-tropic HIV-1 infection, comprising recombinant cells expressing heterologous hCD4 and mCXCR-4, wherein said mCXCR-4 is encoded by a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising SEQ ID NO: 2, wherein said polypeptide binds ~~has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting~~ acts as a binding site for T-cell-line-tropic HIV-1 envelope protein (env) thereby

promoting env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

~~(b) a nucleotide sequence encoding a polypeptide resulting from at least one of deletion, addition, insertion, or substitution of one to 10 amino acid residues in SEQ ID NO: 2 or a partial sequence thereof, or a polypeptide comprising the polypeptide described above, wherein any of the polypeptides has an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;~~

(e) ~~(b)~~ a nucleotide sequence comprising SEQ ID NO: 1, ~~NO: 1~~ or a partial sequence thereof comprising at least SEQ ID NO: 3, SEQ ID NO: 5, or SEQ ID NO: 7, wherein the nucleotide sequence encodes a polypeptide which binds ~~having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acts~~ acting as a binding site for T-cell-line-tropic HIV-1 env thereby promoting cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4;

~~(d) a nucleotide sequence resulting from at least one of deletion, addition, insertion, or substitution of one to 10 bases in a DNA comprising SEQ ID NO: 1 or a partial sequence thereof, or a nucleotide sequence comprising the nucleotide sequence, wherein any of the nucleotide sequences encodes a polypeptide having an activity of a receptor capable of binding to a murine PBSF/SDF-1 and acting as a binding site for T-cell-line-tropic HIV-1 env cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4; and~~

(e) ~~(c)~~ a nucleotide sequence ~~capable of hybridizing~~ that hybridizes under stringent conditions of 42°C, 5 x SSPE, 50% formamide, 1 x Denhardt's reagent, 10% dextran disodium sulfate, and 0.1% SDS with the entire complementary nucleotide sequence of any one of (a) to

(d) (b) above, and encoding a polypeptide which binds ~~having an activity of a receptor capable of binding~~ to a murine PBSF/SDF-1 and acts ~~acting~~ as a binding site for T-cell-line-tropic HIV-1 env thereby promoting cell membrane fusion with a T-cell-line-tropic HIV-1 in the presence of human CD4.

23-26. (Canceled)

27. (Currently Amended) The method according to claim 13, wherein said nucleotide sequence is ~~selected from the group consisting of: SEQ ID NO: 1, NO: 1 and SEQ ID NO: 5.~~

28. (Currently Amended) The method according to claim 13, wherein said ~~polypeptide comprises SEQ ID NO: 2.~~ polynucleotide sequence is (a).

29. (Currently Amended) The recombinant cell according to claim 16, wherein said nucleotide sequence is ~~selected from the group consisting of: SEQ ID NO: 1, NO: 1 and SEQ ID NO: 5.~~

30. (Currently Amended) The recombinant cell according to claim 16, wherein said ~~polypeptide comprises SEQ ID NO: 2.~~ polynucleotide sequence is (a).

31. (Previously Presented) The recombinant cell according to claim 16, wherein said recombinant cell is derived from a cell line selected from the group consisting of: a Chinese

hamster ovary cell line, a human colon cancer cell line, SW480 cells, a human osteoblastsarcoma cell line, HOS cells, a human glioblastoma cell line, and U87MG cells.

32. **(Currently Amended)** The kit according to claim 22, wherein said nucleotide sequence is ~~selected from the group consisting of: SEQ ID NO: 1, NO: 1 and SEQ ID NO: 5.~~

33. **(Previously Presented)** The kit according to claim 22, wherein said ~~polypeptide~~ comprises SEQ ID NO: 2. polynucleotide sequence is (a).

34. **(Previously Presented)** The kit according to claim 22, wherein said HIV-1 infection is a strain NL432 or strain IIIb infection.

35. **(Canceled)**